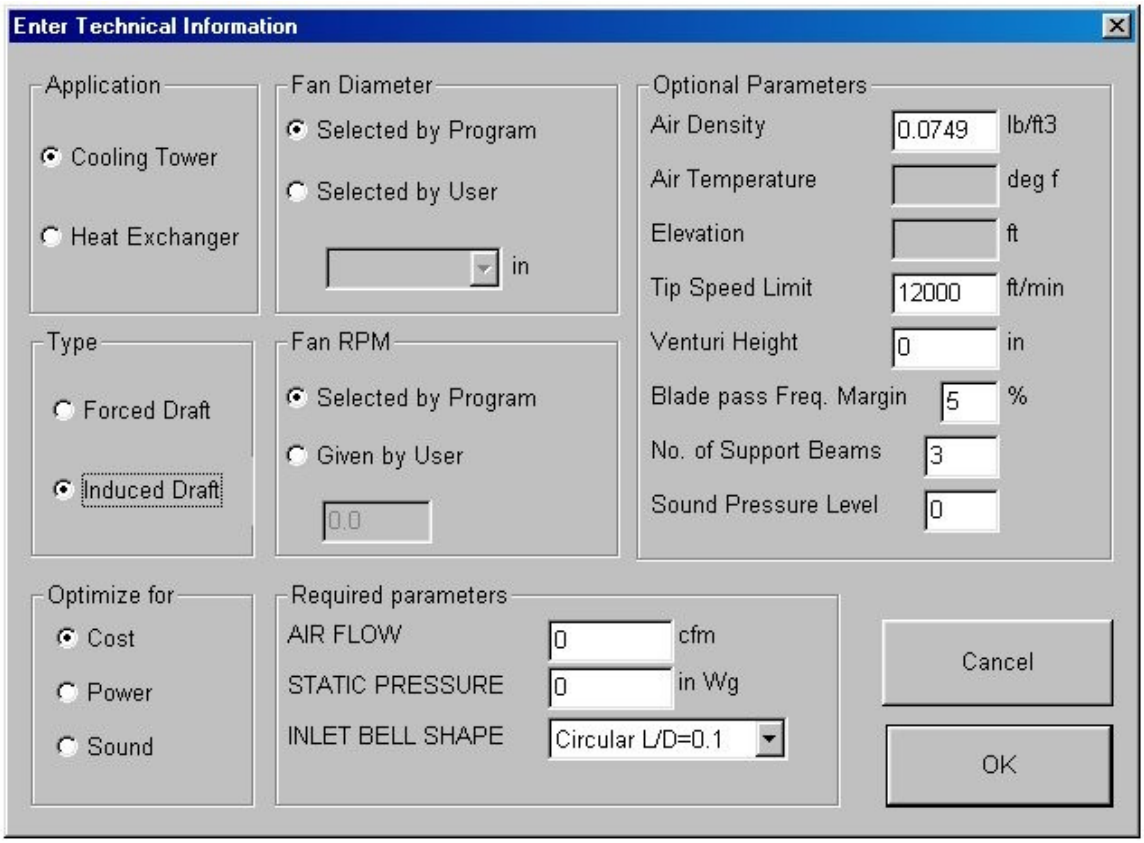
FAN SELECTION SOFTWARE

The fan selection software is the result of our dedicated efforts of many years. The program basically works upon a database maintained by the fan manufacturing company. This database contains all the technical details of the fan models like model name, fan diameter, hub diameter, number of blades, fan speed, materials of construction, fan weight, natural frequencies of blades, etc. along with curve information. Curve information includes curve data for different tip angles i.e. flow, pressure, power, efficiency data for all tip angles. Using fan laws the program can convert design curves to different fan speeds and / or different air densities.



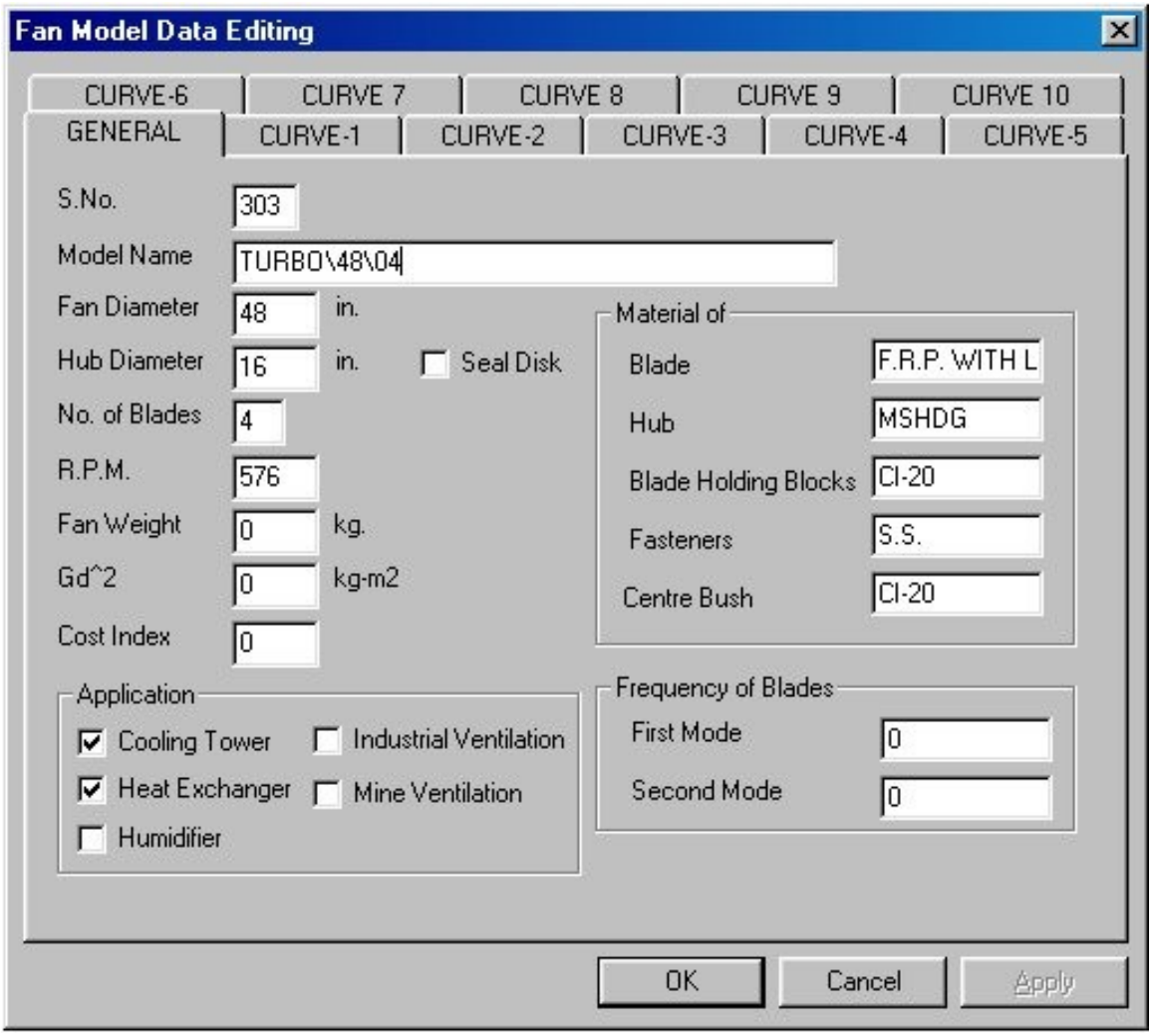
For selecting a fan the user is asked to provide information like air flow rate, static pressure and inlet bell shape. Optionally the user can also provide air density / temperature and altitude, allowable tip speed, number of support beams, venturi height, etc., otherwise the program uses default values of these parameters. The user also needs to specify fan diameter and fan speed, if they are available with the user, else the program will decide the fan diameter and fan speed. A screen like the one shown below is displayed to accept data from user. Before this the user is also asked to select system of units, Metric or I-P. The following screen is for I-P units.

Depending upon the data supplied by the user, the fan database is searched for fans performing required duty. The best suited fan model depending on the criteria for optimization is shown to the user. The performance curves, specification sheet and speed-torque curve of the selected fan can be viewed and printed. Appropriate error messages are shown when the required duty is not met. A specification sheet like the one shown below is displayed by the program after fan selection. The following screen is for Metric units.

User : Turbo Computer Professionals P. Ltd.							Prepared by		
Customer : Customer_1							Inquiry no. : 2002/01/05		
Job no. : 2002/01							Item no. : 125		
Run Date :	09/05/02								
Selected Fan Specifications As Follows:									
Parag Fan Model :	PARAG-MAP-5486-8HV-P18								
Fan Diameter :	5486	mm							
Hub Diameter :	762	mm							
Number of Blades :	8								
Fan Speed :	220.0	rpm							
Pitch Angle :	14.0	deg.							
Air Flow :	200.0	m3/sec							
Static Pressure :	200.0	Pascal							
Velocity Pressure :	50.4	Pascal							
Velocity Pressure Recovery :	0.0	Pascal							
Inlet Loss :	0.0	Pascal							
Total Pressure :	250.4	Pascal							
Air Density At Exit :	1.200	kg/m3							
Fan Shaft Power :	62.7	kW							
Allowable Power / Blade :	10.4	kW							
Total Fan Efficiency :	80.0	%							
Static Fan Efficiency :	63.9	%							
Fan Assembly Weight :	295.0	kg							
Fan GD**2 Value :	1231.0	kg-M2							
Total Thrust :	8813.2	N							
Blade Construction & Material :	Hollow FRP with leading edge & UV protection								
Hub Centre Bush Material :	CI-20								
Hub Support Plates Material :	MSHDG								
Blade Holding Block Material :	AL.- LM6								
Fastening Hardware Material :	S.S.								
Seal Disc	F.R.P.								
Blade Natural Frequency :	6.8	Hz							
Blade Pass Frequency :	29.3	Hz							
Beam Pass Frequency :	11.0	Hz							
Octave Bands (Hz)	63	125	250	500	1k	2k	4k	8k	
Lw	110.1	109.1	106.1	100.6	100.1	095.1	092.6	085.1	
Lp (Inlet)	098.6	097.6	094.6	089.1	088.6	083.6	081.1	073.6	
Lp (Side)	091.6	097.6	094.6	089.1	088.6	083.6	081.1	073.6	
LwA	**105.1**	dbA							
LpA (Inlet)	**093.6**	dbA							
LpA (Side)	**086.6**	dbA							

The parameters in specification sheet can be customized to match fan manufacturing company's requirements.

The Master data creation software gives the complete environment for for feeding the fan data into the database. The selection is done from the master database.



The software is developed in Visual C++ programming language. It is supported on Windows 95 and higher operating systems. The code of software is very compact, so link can be given on website to download software.